



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
WASHINGTON, D.C. 20555-0001

May 15, 2015

**LICENSEE:** Xcel Energy

**FACILITY:** Prairie Island Nuclear Generating Plant, Units 1 and 2

**SUBJECT:** SUMMARY OF THE APRIL 14, 2015, PUBLIC MEETING WITH XCEL ENERGY AND WESTINGHOUSE TO DISCUSS A POTENTIAL FUTURE LICENSE AMENDMENT REQUEST REGARDING THE USE OF INTEGRAL FUEL BURNABLE ABSORBER NEUTRON ABSORBERS IN WESTINGHOUSE 422V+ FUEL ASSEMBLY DESIGN (TAC NOS. MF5839 AND MF5840)

On April 14, 2015, the U.S. Nuclear Regulatory Commission (NRC) staff held a Category 1 public meeting with representatives of Northern States Power Company - Minnesota, doing business as Xcel Energy (the licensee), and Westinghouse, at NRC headquarters. The purpose of the meeting was for the licensee to discuss its future license amendment request submittal to combine Integral Fuel Burnable Absorber (IFBA) and gadolinium (Gd) neutron absorbers in the Westinghouse 422+ fuel assembly design for operations and fuel storage at the Prairie Island Nuclear Generating Plant (PINGP), Units 1 and 2. Specifically, Xcel Energy planned to describe the preliminary conclusions on the effects of the proposed change; discuss the proposed schedule for submitting the license amendment request; and discuss the scope of the NRC staff's review, including a spent fuel pool criticality safety analysis license amendment request.

The licensee's slide presentation followed handout material provided during the meeting and docketed on the NRC's Agencywide Documents Access and Management System (ADAMS) at Accession No. ML15105A037. The licensee indicated during the meeting that the information provided in its presentation may be made publicly-available.

Xcel Energy discussed its initiative to combine IFBA and Gd neutron absorbers in the Westinghouse 422V+ fuel assembly design for PINGP operations and fuel storage.

Meeting points of discussion and comments are summarized below:

- Xcel Energy indicated that PINGP will be the first facility to use IFBA/Gd in nuclear fuel assemblies. The IFBA and Gd will be incorporated in the same fuel assembly, but not in the same fuel rod.
- Xcel Energy (with Westinghouse support) explained that this IFBA/Gd change will improve the hold-down effect of neutron absorbers and provide flexibility to better control the operating cycle length and improve some safety margins. The use of IFBA/GD has a benefit of "levelizing" boron concentration through the operating cycle.
- The NRC staff asked various questions regarding the fuel assembly geometry and dimensions. AREVA indicated that there will be no change in either the geometry or dimensions of the fuel assembly containing IFBA/Gd.

- Xcel Energy indicated that IFBA/Gd fuel assemblies are not specifically licensed for the current dry cask storage, and that this will need to be addressed from a regulatory perspective in the future. The licensee also indicated that loading of the first IFBA/Gd fuel assemblies into dry cask storage would not occur until approximately 2032, and estimated that one less spent fuel cask will need to be loaded on the ISFSI during the remaining period of licensed operation utilizing the IFBA/Gd fuel assemblies.
- Xcel Energy staff explained how their preliminary Title 10 of the *Code of Federal Regulations* (10 CFR) 50.59 review provided high confidence that the effects of IFBA/Gd on reactor operations could be implemented without prior NRC approval. The NRC staff stated its understanding of the initiative's merits, but provided some considerations to include in the 10 CFR 50.59 review (e.g., provide an improved evaluation of the potential change in radiological source term).
- The NRC staff indicated that Xcel Energy further examine its 10 CFR 50.59 review to ensure that all aspects of the change are evaluated, and some staff further indicated that certain changes could not be made under 10 CFR 50.59. The staff mentioned some examples associated with the technical specifications (TSs), such as how modeling or methodology changes could affect Core Operating Limits Report (COLR) references or how the IFBA and Gd rod interaction may impact design requirements such as departure from nuclear boiling.
- Xcel Energy presented its basis for requiring prior NRC approval of the expected changes that affect spent fuel pool (SFP) operations, which are related to Table 4.3.1 of the PINGP TSs. Accordingly, Xcel Energy stated plans to submit a license amendment request with a supporting criticality analysis in November 2015, and that it will request NRC approval by November 2017.
- The NRC staff offered a set of questions regarding applicability of analysis methodology to the combination of IFBA/Gd, appropriate analysis benchmarks, and depletion uncertainties. The staff also requested justification for a SFP multiple-misloading accident analysis, including a full and detailed discussion of bounding conditions.
- There was general agreement that a future public meeting (in approximately 4 months) may be helpful to improve alignment with NRC staff expectations.

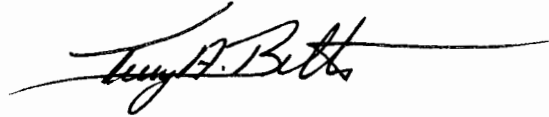
The Enclosure to this meeting summary contains the list of participants.

Before the meeting adjourned, all meeting participants were given the opportunity to comment on any aspects of the meeting.

No regulatory decisions or commitments were made during the meeting. There were no members of the public in attendance at the meeting, either in the room or recognized on the telephone conference line. The NRC staff received no public comments and no meeting feedback forms.

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Please direct any inquiries to me at 301-415-3049 or e-mail [terry.beltz@nrc.gov](mailto:terry.beltz@nrc.gov).

A handwritten signature in black ink, appearing to read "Terry A. Beltz", with a long horizontal flourish extending to the right.

Terry A. Beltz, Senior Project Manager  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos.: 50-282 and 50-306

Enclosure: List of Participants

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LIST OF PARTICIPANTS  
U.S. NUCLEAR REGULATORY COMMISSION (NRC) PUBLIC MEETING  
WITH XCEL ENERGY, INC., AND WESTINGHOUSE  
TO DISCUSS A PROPOSED LICENSE AMENDMENT REQUEST REGARDING  
INTEGRAL FUEL BURNABLE ABSORBER RODS IN NUCLEAR FUEL AT THE  
PRAIRIE ISLAND NUCLEAR GENERATING PLANT, UNITS 1 AND 2

<u>NAME</u>	<u>ORGANIZATION</u>
Glenn Adams	Xcel Energy
Reed Anzalone	NRC/NRR/DSS/SNPB
Michael Baumann	Xcel Energy
Terry Beltz	NRC/NRR/DORL/LPL3-1 <sup>1</sup>
Andrew Blanco	Westinghouse
Margaret Chernoff	NRC/NRR/DSS/STSB <sup>2</sup>
Courtney Corley	Westinghouse
Gene Eckholt	Xcel Energy
Sue Goetz	NRC/NRR/DORL/LPL3-1 <sup>1</sup>
Kevin Heller	NRC/NRR/DSS/SNPB <sup>3</sup>
Henry Hoelscher	Xcel Energy
Christopher Jackson	NRC/NRR/DSS/SRXB <sup>4</sup>
Fred Korsaty	NRC/NRR/DSS/SRXB <sup>4</sup>
Steven McSorley	Xcel Energy
Matthew Pannicker	NRC/NRR/DSS/SNPB <sup>3</sup>
John Parillo	NRC/NRR/DRA/ARCB <sup>5</sup>
Darrin Smith	Westinghouse
Christopher Wagener	Westinghouse
Michael Wenner	Westinghouse
Greg Williams	Westinghouse
Kent Wood	NRC/NRR/DSS/SRXB <sup>4</sup>
Matthew Yoder	NRC/NRR/DE/ESGB <sup>6</sup>

The following individuals participated by telephone:

Steve Schaeffer	Xcel Energy
Harold Scott	NRC/RES/DSA/FSCB <sup>7</sup>

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<sup>1</sup> Office of Nuclear Reactor Regulation, Division of Operating Reactor Licensing, Plant Licensing Branch III-1

<sup>2</sup> Office of Nuclear Reactor Regulation, Division of Safety Systems, Technical Specifications Branch

<sup>3</sup> Office of Nuclear Reactor Regulation, Division of Safety Systems, Nuclear Performance and Code Review Branch

<sup>4</sup> Office of Nuclear Reactor Regulation, Division of Safety Systems, Reactor Systems Branch

<sup>5</sup> Office of Nuclear Reactor Regulation, Division of Risk Assessment, Radiation Protection and Consequence Branch

<sup>6</sup> Office of Nuclear Reactor Regulation, Division of Engineering, Steam Generator Tube Integrity and Chemical Engineering Branch

<sup>7</sup> Office of Nuclear Regulatory Research, Division of Systems Analysis, Fuel and Source Term Code Development Branch

Enclosure

Please direct any inquiries to me at 301-415-3049 or e-mail [terry.beltz@nrc.gov](mailto:terry.beltz@nrc.gov).

**/RA/**

Terry A. Beltz, Senior Project Manager  
Plant Licensing Branch III-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

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HScott, RES

**ADAMS Accession Numbers:**

**Package: ML15107A060**

**Meeting Notice: ML15084A121**

**Meeting Summary: ML15107A059**

**Licensee Slide Presentation: ML15105A037**

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NAME	TBeltz	MHenderson	CJackson	JDean	RElliott
DATE	05/05/15	05/05/15	05/07/15	05/07/15	05/08/15
OFFICE	ARCB/BC	ESGB/BC	LPL3-1/BC	LPL3-1/PM	
NAME	UShoop	GKulesa	DPelton (MChawla for)	TBeltz	
DATE	05/08/15	05/11/15	05/13/15	05/15/15	

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